

IN THE CLAIMS

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (Currently Amended) Hydroelastic joint for assembling two pieces of a structure and for damping vibrations transmitted between each piece, said joint being suitable for assembly of ground contact members to a main structure of a vehicle, said joint comprising an external reinforcement and an internal reinforcement, each reinforcement having a longitudinal axis, wherein the reinforcements are disposed one around the other and intended to be fixed respectively to one and to the other of said pieces to be assembled, and an assembly forming a hydroelastic spring disposed between said reinforcements in order to permit a relative transverse displacement between said reinforcements, said assembly comprising a first elastically deformable element shaped in order to delimit between said reinforcements at least one sealed volume containing damping fluid, a second elastically deformable element being disposed between said assembly forming a hydroelastic spring and said internal reinforcement, wherein said second elastically deformable element has a longitudinal dimension less than a corresponding longitudinal dimension of the first elastically deformable element, in order to limit a transverse deformation of said first elastically deformable element during a relative tilting of the longitudinal axes of said reinforcements about at least one transverse tilting axis, the longitudinal dimension of each of the first and second elastically deformable elements being defined as an axial dimension of a portion that substantially fills a radial space

between corresponding ones of said reinforcements, and wherein the joint comprises an intermediate reinforcement disposed between said first and second elastically deformable elements, said first and second elastically deformable elements adhering on a central portion with a constant cross-section of said intermediate reinforcement, and said second elastically deformable element adhering on a central portion with a constant cross-section of said internal reinforcement.

2 and 3. (Canceled).

4. (Previously Presented) Hydroelastic joint according to claim 1, characterized in that the first elastically deformable element has two end walls in order to define said sealed volume between said end walls, said first elastically deformable element being provided with a peripheral reinforcement for rigidification at least at the level of said end walls in order to receive a reinforcement by fixing without adhesion in order to ensure impermeability of said volume of damping fluid.

5. (Previously Presented) Hydroelastic joint according to claim 4, characterized in that said end walls connect in a sealed manner the intermediate reinforcement and said external reinforcement in order to define said sealed volume between the intermediate reinforcement and said external reinforcement, said first elastically deformable element receiving by fixing without adhesion the intermediate reinforcement and the external reinforcement.

6. (Previously Presented) Hydroelastic joint according to claim 1, characterised in that said sealed volume is divided into at least two opposite chambers according to a first transverse direction defining a hydraulic damping direction of said assembly forming a hydroelastic spring, said assembly comprising a means for putting said chambers in communication in order to cause a hydraulic damping of said vibrations transmitted between said reinforcements at least according to said first transverse direction.

7. (Previously Presented) Hydroelastic joint according to claim 6, characterised in that the first elastically deformable element has two longitudinal bosses connecting said end walls in order to separate said two chambers, said means for putting the two chambers in communication comprising at least one valve lip fixed to at least one of said longitudinal bosses in order to come into contact with said intermediate reinforcement and said external reinforcement, said valve lip being able to be folded back in order to put said chambers in communication when a pressure difference between said chambers exceeds a threshold value.

8. (Previously Presented) Hydroelastic joint according to claim 6, characterised in that the first elastically deformable element has two limit stops projecting substantially at the centre of each chamber in order to limit a deflection between the external reinforcement and the intermediate reinforcement according to said first transverse direction.

9. (Previously Presented) Hydroelastic joint according to claim 8, characterised in that said limit stops are pretensioned in transverse compression between the intermediate reinforcement and the external reinforcement.

10. (Currently Amended) Hydroelastic joint according to Claim 1, for assembling two pieces of a structure and for damping vibrations transmitted between each piece, said joint comprising an external reinforcement and an internal reinforcement, each reinforcement having a longitudinal axis, wherein the reinforcements are disposed one around the other and intended to be fixed respectively to one and to the other of said pieces to be assembled, and an assembly forming a hydroelastic spring disposed between said reinforcements in order to permit a relative transverse displacement between said reinforcements, said assembly comprising a first elastically deformable element shaped in order to delimit between said reinforcements at least one sealed volume containing damping fluid, a second elastically deformable element being disposed between said assembly forming a hydroelastic spring and said internal reinforcement, characterised in that said second elastically deformable element has a longitudinal dimension less than a corresponding longitudinal dimension of the first elastically deformable element, in order to limit a transverse deformation of said first elastically deformable element during a relative tilting of the longitudinal axes of said reinforcements about at least one transverse tilting axis,

wherein said second elastically deformable element has a rigidity which is less in at least one second transverse direction in order to define, perpendicularly to said

second transverse direction, a preferential transverse tilting axis for said relative tilting of the axes of the external and internal reinforcements.

11. (Previously Presented) Hydroelastic joint according to claim 10, characterised in that said sealed volume is divided into at least two opposite chambers according to a first transverse direction defining a hydraulic damping direction of said assembly forming a hydroelastic spring, and said first transverse direction and said second transverse direction are parallel.

12. (Previously Presented) Hydroelastic joint according to claim 10, characterised in that said sealed volume is divided into at least two opposite chambers according to a first transverse direction defining a hydraulic damping direction of said assembly forming a hydroelastic spring, and said first transverse direction and said second transverse direction form an angle θ .

13. (Previously Presented) Hydroelastic joint according to one claim 10, 11 or 12, characterised in that said second elastically deformable element has at least two cells which are substantially longitudinal and opposite in said second transverse direction.

14. (Previously Presented) Hydroelastic joint according to claim 1, 4, 5, 6, 7, 8, 9, 10, 11, or 12 characterised in that said first and second elastically deformable elements are obtained in a single moulding step.

15. (Previously Presented) Hydroelastic joint according to one of the claim 1, 4, 5, 6, 7, 8, 9, 10, 11, or 12, characterised in that said internal reinforcement is of an overall tubular shape and has a thickened or enlarged, or thickened and enlarged, wall section at the level of at least one of its longitudinal ends in order to provide an increased contact surface with the piece to which said internal reinforcement must be fixed or with a means for fixing said internal reinforcement to said piece.

16. (Previously Presented) Hydroelastic joint according to claim 1, 4, 5, 6, 7, 8, 9, 10, 11, or 12, characterised in that it has at least one external portion which is able to abut on one of said pieces of the structure to be assembled in order to prevent a deformation of the joint beyond a prescribed amplitude limit.

17. (Previously Presented) Axle for an automotive vehicle comprising a beam bearing symmetrically at each of its ends a respective wheel support, said beam being provided symmetrically with two joints in order to assemble said beam to a main structure of the automotive vehicle and to damp vibrations, characterised in that said joints are hydroelastic joints according to claim 1, 4, 5, 6, 7, 8, 9, 10, 11, or 12.

18. (Previously Presented) Axle according to claim 17, characterised in that said joints are fixed to said beam in order that a respective axis of each of said joints forms an angle α greater than 20° with a direction defined by the two wheel supports.

19. (New) Hydroelastic joint for assembling two pieces of a structure and for damping vibrations transmitted between each piece, said joint being suitable for assembly of ground contact members to a main structure of a vehicle, said joint comprising an external reinforcement and an internal reinforcement, each reinforcement having a longitudinal axis, wherein the reinforcements are disposed one around the other and intended to be fixed respectively to one and to the other of said pieces to be assembled, and an assembly forming a hydroelastic spring disposed between said reinforcements in order to permit a relative transverse displacement between said reinforcements, said assembly comprising a first elastically deformable element shaped in order to delimit between said reinforcements at least one sealed volume containing damping fluid, a second elastically deformable element being disposed between said assembly forming a hydroelastic spring and said internal reinforcement, wherein said second elastically deformable element has recesses in an axially outer portion thereof, in order to limit a transverse deformation of said first elastically deformable element during a relative tilting of the longitudinal axes of said reinforcements about at least one transverse tilting axis, and wherein the joint comprises an intermediate reinforcement disposed between said first and second elastically deformable elements, said first and second elastically deformable elements adhering on a central portion with a constant cross-section of said intermediate reinforcement, and said second elastically deformable element adhering on a central portion with a constant cross-section of said internal reinforcement, the second elastically deformable element comprising cells positioned within said recesses, the cells having a radial dimension less than a radial dimension of said recesses.